

SPECIFICATION



Clean Air Toilet System-Tank "C.A.T.S -Tank"

The Field of Invention

The present invention relates generally to the field of toilets, and particularly with respect to those devices used as ventilation systems for toilets.

Description of Related Art

Many toilet ventilation systems exist, but none of them disclose a toilet tank device that extracts odor primarily from the toilet bowl, thus eliminating any odor exposure in the room and to the user. Scott III U.S.Pat.No.5,930,844 teaches a drain pipe communicating between tank and a bowl and air flow control arrangement including resistance to water flow into the air ventilation duct. Curiel U.S.Pat.No.5,839,127 show an odor extractor device connected to the overflow tub of the toilet assembly. A flexible sheet maximizes the suction. Eager U.S.Pat.No.5,305,472 connects the water passageway of the toilet assembly with an extractor device to extract the odors from the toilet bowl. Unfortunately those inventions need significantly modifications or adaptations to the toilet plumbing system, require plumbing code approval and may not be economically incorporated into existing conventional toilets or new building constructions.

Advantages over Related Art

The primary advantage and benefit of said invention is that the device does not interfere with the existing plumbing or ventilation system and thus does not require approval for the plumbing or mechanical code. Additionally, the device is cost effective, easy to install in conventional toilets, is triggered automatically with the bathroom's electrical lighting system, is silent, saves energy and increases air quality in the room.

Summary of Invention

It is one of the main objects of the present invention to provide a device that extracts odor primarily from the toilet bowl, and before it is released in the room, thus increasing the efficiency of the toilet ventilation system.

It is another object of this invention to provide a toilet tank with an air passageway that is connected to the existing surrounding ducts, and that is easily adaptable to existing toilet systems, as well as ones manufactured in new buildings.

It is yet another object of this invention to provide a toilet tank device that is cost effective, easy to manufacture, silent, efficient, complying with the plumbing and mechanical codes, and that increases interior air quality in houses and buildings.

Brief Description of the Drawings

With the above objectives in view, the invention is depicted in the accompanying drawings which are as follows:

Fig.1 Three dimensional view of the "CATS-TANK" and toilet bowl;

Fig.2 Plan view along the line A-A Fig.3, 4 and 5;

Fig.3 Front view;

Fig.4 Sectional view along the line B-B Fig.2;

Fig.5 Back view;

Fig.6 Three dimensional view of the "CATS-TANK" equipped with the ventilation system;

Fig. 7 Air flow schematic of the ventilation system.

Detailed Description of the Preferred Embodiment

Referring to the drawings for better understanding of the invention,* it will be appreciated that the present invention can be utilized with conventional toilets 20. Those toilets include an air extractor 13, an electrical conduit with switch 16, a toilet bowl 8, a toilet rim 17, a toilet seat 7, a cold water supply 11, a water drain 10, the toilet tank 3 with lid 5, having back openings 4, an air passageway 2, an air and grille filter 1, an air duct 9, connecting openings 4 of the toilet tank 3, an air extractor 13, the electrical conduit and switch 16 that triggers the air extractor 13. The air odor typically present in and around the toilet bowl 8 are extracted through the air grille and filter 1 using the passageway 2, opening 4, surrounding ducts 9 and are released to exterior 21. Between toilet rim 17 and the toilet seat 7 an air tight insulation 6 is attached to increase the efficiency of air suction. The ventilation system will work until the electrical switch 16 will be turned off. The above description conveys the best understanding of the objectives and advantages of the present invention. Different embodiments of the ventilation system may be made. It is to be understood that all matters disclosed herein are to be interpreted merely as illustrative and not in a limiting sense. The following table lists the part numbers and part descriptions, as used herein and in the drawing attached hereto: